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United States  
Department of  
Agriculture  
Natural  
Resources  
Conservation  
Service

# Idaho

## Basin Outlook Report

### January 1, 1998

1998  
1/1/98  
A:35



# **Basin Outlook Reports**

## **and**

## **Federal - State - Private**

## **Cooperative Snow Surveys**

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*For more water supply and resource management information, contact:*

**Your local Natural Resources Conservation Service Office**

**or**

**Natural Resources Conservation Service**

**Snow Surveys**

**3244 Elder Street, Room 124**

**Boise, ID 83705-4711**

**(208) 378-5740**

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### *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snowcourses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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# **IDAHO WATER SUPPLY OUTLOOK REPORT**

**JANUARY 1, 1998**

## **SUMMARY**

Winter snows arrived late in Idaho this fall after last year's record snow levels finally melted in June and July. The 1998 water year started with the entire state receiving one to two times the normal October precipitation. Then, in November and December the drying trend started. As a result, snow water content levels are below normal across the entire state as well as streamflow forecasts. On a positive note, last year's high runoff left Idaho reservoirs with good carryover storage which will help buffer impacts of the low streamflows. Water supplies should be adequate for most reservoir water users with the possible exception in the Wood and Lost river basins where supplies may be marginal due to very low streamflow forecasts. Natural streamflow or in-stream water users may also experience low volumes if the dry conditions continue.

## **SNOWPACK**

Idaho's seasonal snowpack got off to one of the slowest starts in years. In early December, several central mountain snow measuring stations had the least amount of snow water since daily records started in the early 1980s. Currently, snowpacks are 50-70% of average across the entire state which is about one-third of last year's snowpack. The Clearwater basin has the highest percentage in the state at 73% of average. The lowest snowpacks are about half of normal in the central Idaho mountains. These mountains are the headwaters and snowmelt source for the Boise, Big Wood and Middle Fork Salmon rivers. Snowfall since January 1 has helped, but much more is needed to overcome these deficits. With more than half the snow season still to come, conditions could change depending on what El Nino and Mother Nature have in store for Idaho.

## **PRECIPITATION**

Water year 1998 started with the entire state receiving 110-200% of average precipitation in October. November brought warm and dry weather; precipitation was half to three-quarters of normal across the state. In December the drying trend continued. Monthly precipitation was even less, ranging from 27% of average in the Wood and Lost basins to 57% in the Clearwater basin. Water year to date precipitation (October 1 to present) is the highest in the Clearwater basin (85% of average) and decreases to about 55% of average across the southern Idaho basins. The January-March outlook from the National Weather Service calls for below normal precipitation and above normal temperatures for the northern half of Idaho.

## **RESERVOIRS**

Good carryover storage will help provide the saving grace for Idaho's agricultural water supply this year. Nearly all Idaho reservoirs are reporting above average storage and are half to three-quarters full as a result of last summer's high runoff and sustained baseflows. The combined reservoir storage for the eight upper Snake basin reservoirs, the Payette system, and Bear Lake are each about 78% of capacity. The Boise system and Magic Reservoir are about 70% of capacity while Salmon Falls, Oakley and Mackay reservoirs are 40-55% full. This storage will help buffer the low streamflow amounts if the dry spell continues.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive, and in some cases dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

## **STREAMFLOW**

Last year's high snowpack and high runoff sustained streamflow levels well into the fall. October streamflows were 120-140% of average for most Idaho streams. November flows ranged from 90% of average in the Payette basin to 150% of average in the Clearwater basin. After consecutive dry months, December flows ranged from 80-110% of average -- the first time in months that volumes were below average. In early fall some eastern Idaho streams were still at near record high levels for that time of year. These good baseflows will help provide additional water for this coming season. Streamflow forecasts are below normal across the state and range from 60-80% of average for most streams. The lowest forecasts are 40-50% of average in the Big Wood and Owyhee basins. Additional El Nino/Southern Oscillation Index information and its correlation with spring/summer streamflow is available on our Internet page: <http://idsnow.id.nrcs.usda.gov/>

## **WATER SUPPLY FORECASTING PRODUCTS ON THE INTERNET**

Water Supply Forecasting products are now available on the INTERNET. These products include the SNOTEL Update Reports, State Basin Outlook Reports, and products previously published in the Water Supply Outlook for the Western United States.

The Universal Resource Locator (URL) for our home page is: <http://id.nrcs.usda.gov>  
You can access the Anonymous FTP server by pointing your INTERNET browser (Netscape, Mosaic, etc.) to: <ftp://ftp.wcc.nrcs.usda.gov>

We will continue to add more products to our Home Page and Anonymous FTP server and welcome any comments and suggestions you might have. Questions and comments should be directed to the NRCS Snow Survey.

Natural Resources Conservation Service  
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**IDAHO SURFACE WATER SUPPLY INDEX (SWSI)**  
**As of January 1, 1998**

The surface water supply index (sksi) is predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

SWSI values are published January through May, and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

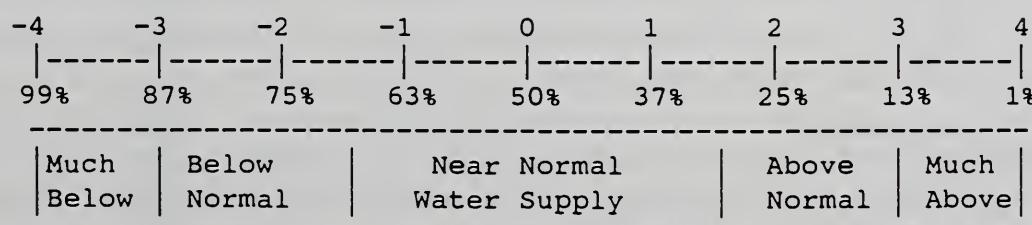
The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US Department of Commerce, National Weather Service  
 US Bureau of Reclamation  
 Idaho Water Users Association

US Army Corps of Engineers  
 Idaho Department of Water Resources  
 PacifiCorp

<i>BASIN or REGION</i>	<i>SWSI Value</i>	<i>Most Recent Year With Similar SWSI Value</i>	<i>Agricultural Water Supply Shortage May Occur When SWSI is Less Than</i>
PANHANDLE	-2.6	1988	NA
CLEARWATER	0.7	1990	NA
SALMON	-0.9	1981	NA
WEISER	-1.5	1985	NA
PAYETTE	-0.6	1985	NA
BOISE	-0.5	1993	-2.6
BIG WOOD	-1.3	1981	-1.4
LITTLE WOOD	-0.2	1985	-2.1
BIG LOST	-1.2	1979	-0.8
LITTLE LOST	-0.7	1990	0.0
HENRYS FORK	-1.2	1981	-3.3
SNAKE (AMERICAN FALLS)	0.8	1985	-2.0
OAKLEY	1.6	1979	0.0
SALMON FALLS	1.9	1982	0.0
BRUNEAU	-1.8	1991	NA
OWYHEE	-0.3	1994	NA
BEAR RIVER	-0.8	1988	-3.8

**SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION**



Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply", represents three SWSI units and would be expected to occur about one third (36%) of the time.

## B A S I N - W I D E S N O W P A C K S U M M A R Y

JANUARY 1998

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Kootenai ab Bonners Ferry	40%	63%
Moyie River	27%	54%
Priest River	30%	69%
Pend Oreille River	34%	68%
Rathdrum Creek	30%	71%
Hayden Lake	0%	0%
Coeur d'Alene River	22%	47%
St. Joe River	30%	61%
Spokane River	26%	56%
Palouse River	26%	71%
North Fork Clearwater	33%	67%
Lochsa River	38%	83%
Selway River	43%	86%
Clearwater Basin Total	36%	73%
Salmon River ab Salmon	24%	54%
Lemhi River	44%	72%
Middle Fork Salmon River	25%	54%
South Fork Salmon River	30%	65%
Little Salmon River	32%	68%
Salmon Basin Total	32%	65%
Mann Creek	44%	76%
Weiser River	35%	71%
North Fork Payette	34%	71%
South Fork Payette	27%	52%
Payette Basin Total	31%	64%
Middle & North Fork Boise	24%	54%
South Fork Boise River	25%	53%
Mores Creek	25%	62%
Boise Basin Total	25%	54%
Canyon Creek	22%	0%
Big Wood ab Magic	21%	52%
Camas Creek	25%	49%
Big Wood Basin Total	23%	52%
Little Wood River	21%	49%
Fish Creek	0%	0%
Big Lost River	22%	61%
Little Lost River	26%	51%
Birch-Medicine Lodge Creeks	35%	70%
Camas-Beaver Creeks	27%	45%
Henrys Fork-Falls River	32%	72%
Teton River	34%	68%
Snake above Jackson Lake	36%	75%
Gros Ventre River	33%	63%
Hoback River	22%	51%
Greys River	27%	52%
Salt River	31%	64%
Snake above Palisades	32%	67%
Willow Creek	25%	65%
Blackfoot River	22%	51%
Portneuf River	30%	68%
Snake abv American Falls Resv	31%	66%
Raft River	22%	60%
Goose-Trapper Creeks	21%	55%
Salmon Falls Creek	33%	73%
Bruneau River	35%	70%
Owyhee Basin Total	25%	47%
Smiths & Thomas Forks	26%	64%
Bear River ab WY-ID line	31%	61%
Montpelier Creek	25%	43%
Mink Creek	23%	49%
Cub River	27%	71%
Bear River ab ID-UT line	29%	60%
Malad River	20%	69%
Green River ab Warren Bridge	21%	49%
Upper Green River (West Side)	26%	52%
New Fork River	29%	64%
Big Sandy River/Eden Valley	31%	63%
Green River above Fontenelle	24%	53%
Hams Fork River	27%	58%
Green River above Flaming Gorge	31%	63%

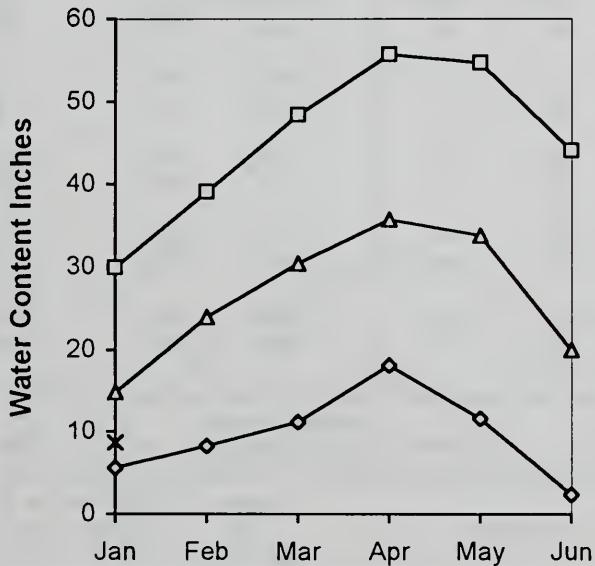
# PANHANDLE REGION

## JANUARY 1, 1998



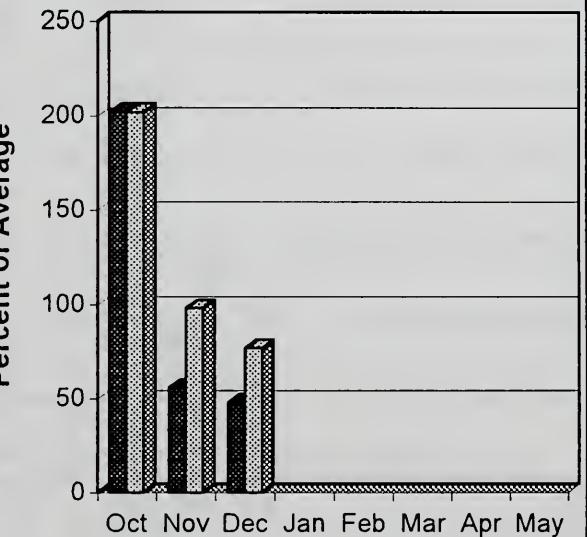
### Mountain Snowpack (inches) PANHANDLE REGION

— Current      ▲ Average  
— □ Maximum      ◆ Minimum



### Mountain Precipitation PANHANDLE REGION

■ Monthly      ▨ Year-to-date



## WATER SUPPLY OUTLOOK

Mountain precipitation for water year 1998 was twice normal in October and dropped to only half of normal in November and December. Precipitation for the water year is 77% of average. Snowpacks in the Idaho Panhandle reflect the below normal precipitation which is typical of El Nino years in northern Idaho. Snowpacks range from 50% of average in the Moyie and Coeur d'Alene basins to 70% in the Priest and Pend Oreille basins. Snow water content levels are about one-third of last year's snow levels at this time. Storage in Coeur d'Alene Lake is 24% of its summer capacity level; Pend Oreille Lake is 57% full. Streamflow forecasts call for below normal spring and summer runoff in the 70-75% of average range. Water supplies should be adequate, but water users should monitor the weather as conditions may change.

**PANHANDLE REGION**  
Streamflow Forecasts - January 1, 1998

Forecast Point	Forecast Period	Future Conditions				30-Yr Avg. (1000AF)		
		<===== Drier =====		Chance Of Exceeding *	Wetter =====>			
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	10% (1000AF)			
KOOTENAI at Leonia (1,2)	APR-JUN	2998	4306	4900	86	5494	6802	5701
	APR-JUL	3783	5411	6150	85	6889	8517	7199
	APR-SEP	4348	6220	7070	85	7920	9792	8275
CLARK FK at Whitehorse Rds (1,2)	APR-JUN	3395	6287	7600	76	8913	11805	10050
	APR-JUL	3809	7200	8740	75	10280	13671	11730
	APR-SEP	4193	7925	9620	75	11315	15047	12910
PEND OREILLE Lake Inflow (1,2)	APR-JUN	3459	6953	8540	75	10127	13621	11390
	APR-JUL	4417	8119	9800	75	11481	15183	13150
	APR-SEP	4813	8861	10700	75	12539	16587	14370
PRIEST nr Priest River (1,2)	APR-JUL	346	559	655	81	751	964	814
	APR-SEP	371	597	700	81	803	1029	868
COEUR D'ALENE at Enaville	APR-JUL	319	474	580	75	686	841	770
	APR-SEP	333	492	600	74	708	867	809
ST.JOE at Calder	APR-JUL	561	742	865	74	988	1169	1169
	APR-SEP	604	789	915	74	1041	1226	1237
SPOKANE near Post Falls (2)	APR-JUL	1060	1527	1845	70	2163	2630	2633
	APR-SEP	1107	1585	1910	70	2235	2713	2730
SPOKANE at Long Lake	APR-JUL	1210	1696	2026	69	2356	2842	2936
	APR-SEP	1367	1871	2214	70	2557	3061	3159

**PANHANDLE REGION**  
Reservoir Storage (1000 AF) - End of December

**PANHANDLE REGION**  
Watershed Snowpack Analysis - January 1, 1998

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HUNGRY HORSE	3451.0	2579.0	2388.0	2586.0	Kootenai ab Bonners Ferry	11	40	65
FLATHEAD LAKE	1791.0	925.5	1132.0	1305.0	Moyie River	1	30	46
NOXON RAPIDS	335.0	327.4	312.8	317.1	Priest River	4	30	69
PEND OREILLE	1561.3	894.9	917.3	744.9	Pend Oreille River	67	34	68
COEUR D'ALENE	238.5	56.8	93.5	130.5	Rathdrum Creek	3	30	71
PRIEST LAKE	119.3	54.0	69.0	54.8	Hayden Lake	0	0	0
					Coeur d'Alene River	5	22	47
					St. Joe River	2	30	61
					Spokane River	10	26	56
					Palouse River	1	26	71

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

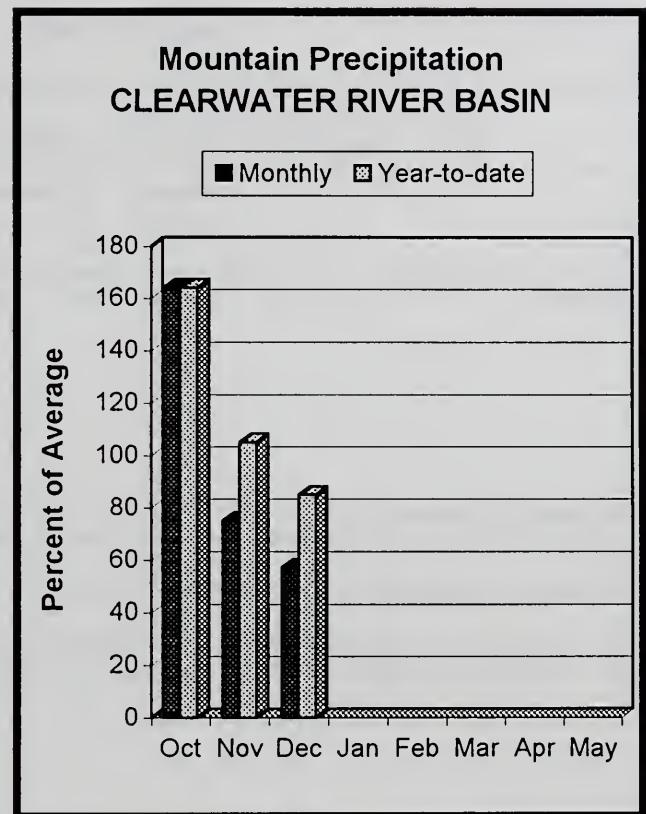
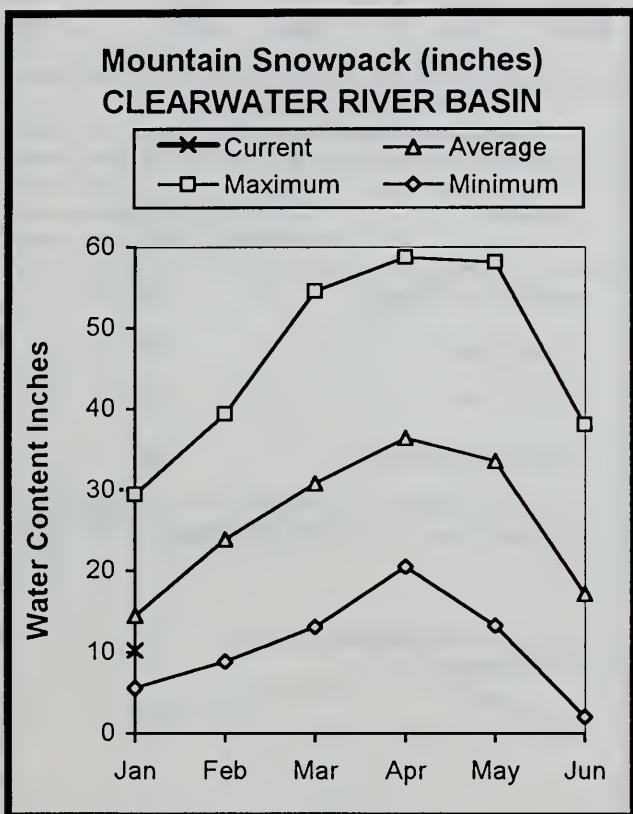
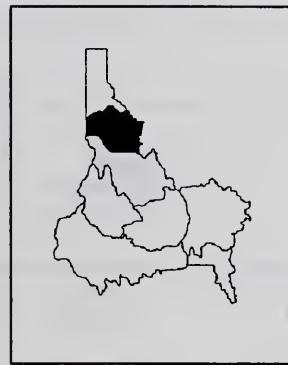
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

# CLEARWATER RIVER BASIN

## JANUARY 1, 1998



## WATER SUPPLY OUTLOOK

The new water year started in October with above average precipitation, 164% of average. However, drier conditions decreased monthly precipitation to 75% of average in November and to only half of average in December. Water year to date precipitation is 85% of average. Snowpacks range from 67% of average in the NF Clearwater basin to 86% in the Selway basin. Overall, the Clearwater basin snowpack is 73% of average. Dworshak Reservoir is below normal at 84% of average due to maintenance work last fall. As typical during El Nino years, streamflows in the Clearwater River basin are forecast below normal. April-July inflow to Dworshak Reservoir is forecast at 82% of average while the Clearwater River at Orofino is expected to yield 88% of average. The Clearwater River has some of the highest correlation of streams in the West with the Southern Oscillation Index which is the atmospheric pressure difference associated with El Nino and La Nina conditions in the southern Pacific Ocean.

**CLEARWATER RIVER BASIN**  
**Streamflow Forecasts - January 1, 1998**

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>				30-Yr Avg. (1000AF)		
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding *	50% (Most Probable) (1000AF)	30% (1000AF)		
DWORSHAK RESV INFLOW (1,2)	APR-JUL	1238	1900	2200	82	2500	3162	2692
	APR-SEP	1339	2028	2340	82	2652	3341	2866
CLEARWATER at Orofino (1)	APR-JUL	1921	3440	4130	88	4820	6339	4718
	APR-SEP	2027	3631	4360	88	5089	6693	4976
CLEARWATER at Spalding (1,2)	APR-JUL	2732	5302	6470	85	7638	10208	7618
	APR-SEP	2883	5604	6840	85	8076	10797	8052

CLEARWATER RIVER BASIN Reservoir Storage (1000 AF) - End of December				CLEARWATER RIVER BASIN Watershed Snowpack Analysis - January 1, 1998				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of Last Yr      Average	
		This Year	Last Year	Avg				
DWORSHAK	3459.0	2053.1	2389.6	2431.0	North Fork Clearwater	10	33	67
					Lochsa River	4	38	83
					Selway River	5	43	86
					Clearwater Basin Total	17	36	73

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

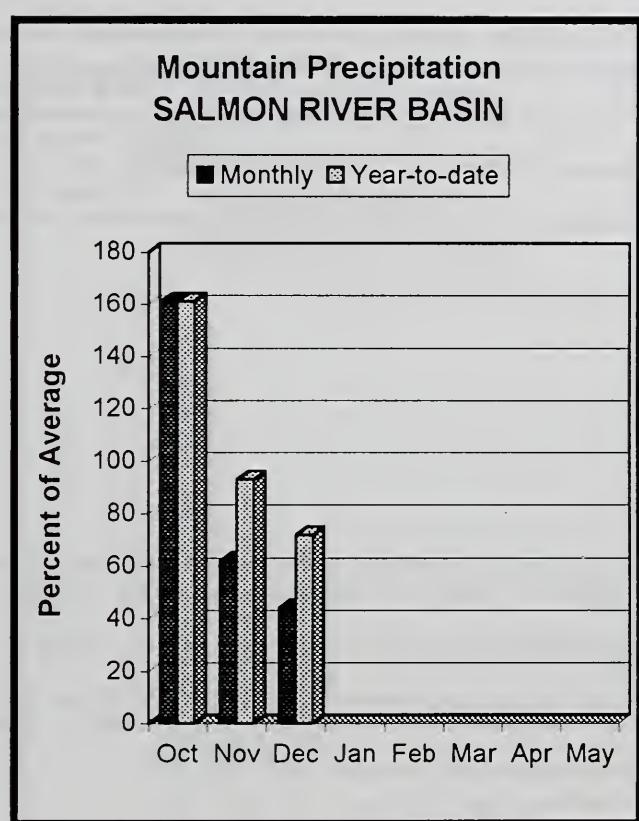
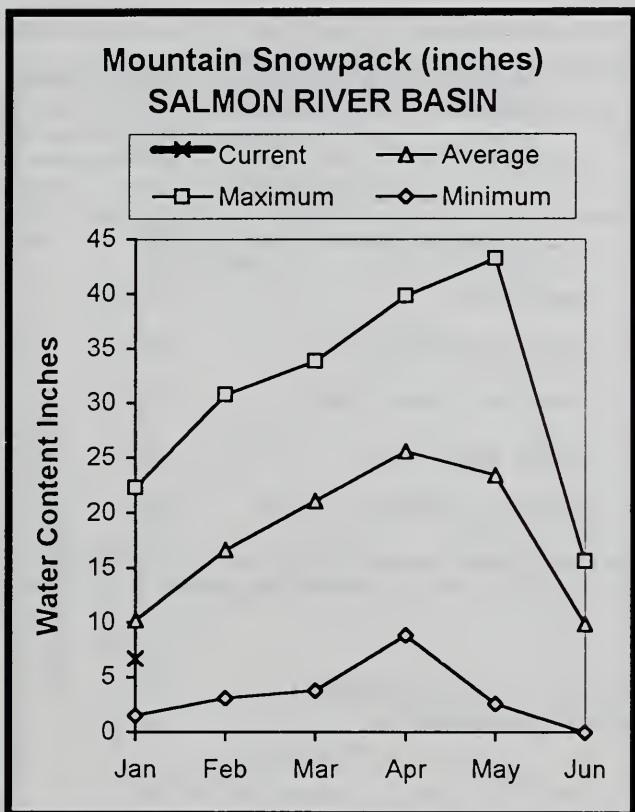
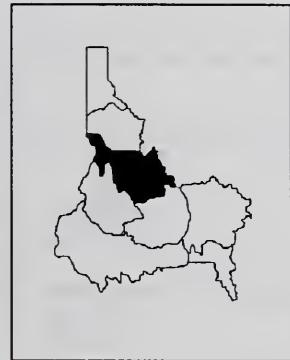
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

# SALMON RIVER BASIN

## JANUARY 1, 1998



## WATER SUPPLY OUTLOOK

The new water year started with above normal precipitation in October (161% of average) but decreased to only 44% of average in December. Precipitation for the water year is 72% of average. Snowpacks in the Salmon River basin are the lowest since 1994 when the snowpack was 53% of average. Snowpacks range from 54% in the headwaters of the Middle Fork and main Salmon river basins to 70% of average in the Lemhi and Little Salmon river basins. Streamflow forecasts for this summer's runoff season call for 82% of average for the Salmon River above Salmon and 87% for Salmon River at White Bird. Water users in the basin can expect lower than normal peak flows and earlier recession to low flow conditions if the dry spell continues.

**SALMON RIVER BASIN**  
Streamflow Forecasts - January 1, 1998

Forecast Point	Forecast Period	Future Conditions						30-Yr Avg. (1000AF)
		<===== Drier =====		Chance Of Exceeding *			Wetter =====>	
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)		
SALMON at Salmon (1)	APR-JUL	274	577	715	82	853	1156	869
	APR-SEP	322	678	840	82	1002	1358	1019
SALMON at White Bird (1)	APR-JUL	2831	4446	5180	87	5914	7529	5956
	APR-SEP	3157	4947	5760	87	6573	8363	6602

**SALMON RIVER BASIN**  
Reservoir Storage (1000 AF) - End of December

**SALMON RIVER BASIN**  
Watershed Snowpack Analysis - January 1, 1998

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					Salmon River ab Salmon	8	23	54
					Lemhi River	4	45	72
					Middle Fork Salmon River	3	25	54
					South Fork Salmon River	3	30	65
					Little Salmon River	4	32	68
					Salmon Basin Total	23	31	65

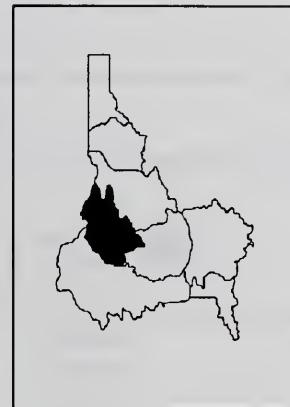
\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

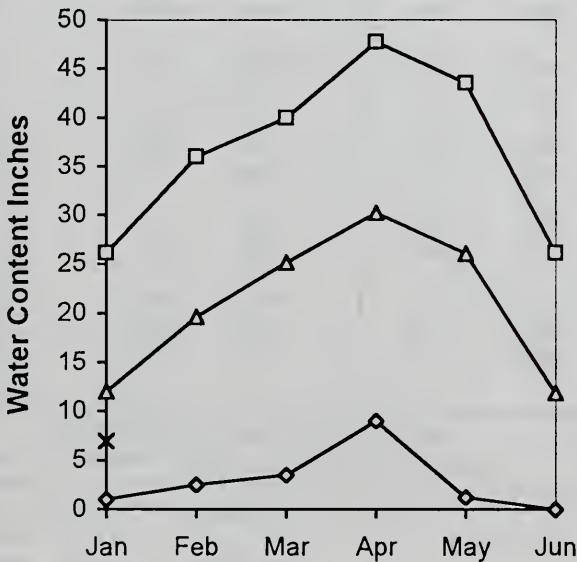
# WEISER, PAYETTE, BOISE RIVER BASINS

## JANUARY 1, 1998



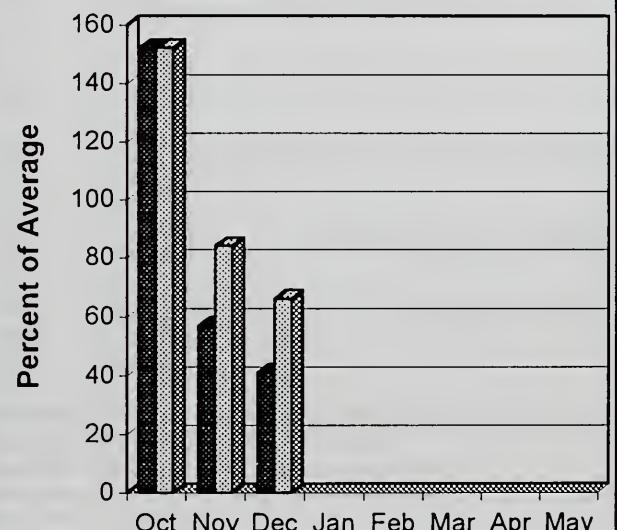
### Mountain Snowpack (inches) WEISER, PAYETTE, BOISE RIVER BASINS

— Current      ▲ Average  
— Maximum      ◇ Minimum



### Mountain Precipitation WEISER, PAYETTE, BOISE RIVER BASINS

■ Monthly      ▨ Year-to-date



## WATER SUPPLY OUTLOOK

Mountain precipitation in October was 152% of average, but drier conditions set in decreasing monthly precipitation to 57% in November and to 41% in December. Water year to date precipitation is 66% of average. Snowpack in the Boise basin is 54% of average, Payette basin is 64% and the Weiser basin is a little better at 71%. Overall the snowpack in these west central basins is the fifth lowest since 1961 and is similar to the dry years of 1994 and 1991. On the positive side, as a result of last year's high runoff the Boise and Payette reservoir systems are nearly three-quarters full. This is the 10th highest December 31 storage level in the past 43 years for the Boise system. Streamflow forecasts mirror the snowpack and call for 70-80% of average flow. Agricultural water supplies should be adequate this year as a result of the good carryover storage.

WEISER, PAYETTE, BOISE RIVER BASINS  
Streamflow Forecasts - January 1, 1998

Forecast Point	Forecast Period	Future Conditions					30-Yr Avg. (1000AF)	
		<===== Drier =====		Chance Of Exceeding *		Wetter =====>		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
WEISER nr Weiser (1)	APR-JUL	71	239	315	82	391	559	386
	APR-SEP	79	258	340	82	422	601	415
SF PAYETTE at Lowman	APR-JUL	213	298	355	82	412	497	432
	APR-SEP	253	343	405	83	467	557	488
DEADWOOD RESERVOIR Inflow (1,2)	APR-JUL	61	93	108	80	123	155	135
	APR-SEP	65	99	114	80	129	163	143
NF PAYETTE nr Cascade (1,2)	APR-JUL	197	343	410	83	477	623	496
	APR-SEP	214	370	441	83	512	668	533
NF PAYETTE nr Banks (2)	APR-JUL	299	434	526	81	618	753	648
	APR-SEP	325	467	563	82	659	801	690
PAYETTE nr Horseshoe Bend (1,2)	APR-JUL	619	1087	1300	80	1513	1981	1618
	APR-SEP	701	1195	1420	81	1645	2139	1755
BOISE near Twin Springs (1)	APR-JUL	229	402	480	76	558	731	631
	APR-SEP	252	431	513	75	595	774	686
SF BOISE at Anderson Rnch Dm (1,2)	APR-JUL	150	298	365	67	432	580	544
	APR-SEP	176	328	397	68	466	618	582
MORES CK nr Arrowrock Dam	APR-JUL	67	90	106	82	122	145	129
	APR-SEP	72	95	111	83	127	150	134
BOISE nr Boise (1,2)	APR-JUN	450	759	900	71	1041	1350	1264
	APR-JUL	460	828	995	70	1162	1530	1421
	APR-SEP	544	926	1100	72	1274	1656	1535

WEISER, PAYETTE, BOISE RIVER BASINS  
Reservoir Storage (1000 AF) - End of December

WEISER, PAYETTE, BOISE RIVER BASINS  
Watershed Snowpack Analysis - January 1, 1998

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MANN CREEK	11.1	1.7	4.8	4.2	Mann Creek	1	44	76
CASCADE	703.2	543.8	598.0	419.7	Weiser River	3	35	71
DEADWOOD	161.9	127.4	131.0	73.7	North Fork Payette	7	35	71
ANDERSON RANCH	464.2	427.5	405.8	319.9	South Fork Payette	4	26	52
ARROWROCK	286.6	181.8	253.0	193.8	Payette Basin Total	12	31	64
LUCKY PEAK	293.2	111.5	116.6	94.5	Middle & North Fork Boise	7	24	54
LAKE LOWELL (DEER FLAT)	177.1	114.7	106.0	126.0	South Fork Boise River	7	25	53
					Mores Creek	4	23	62
					Boise Basin Total	14	24	54
					Canyon Creek	1	0	0

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

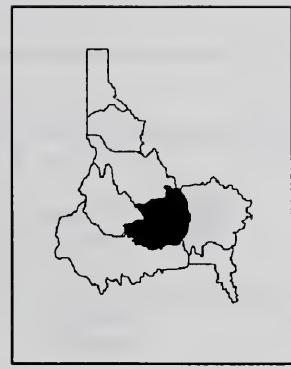
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

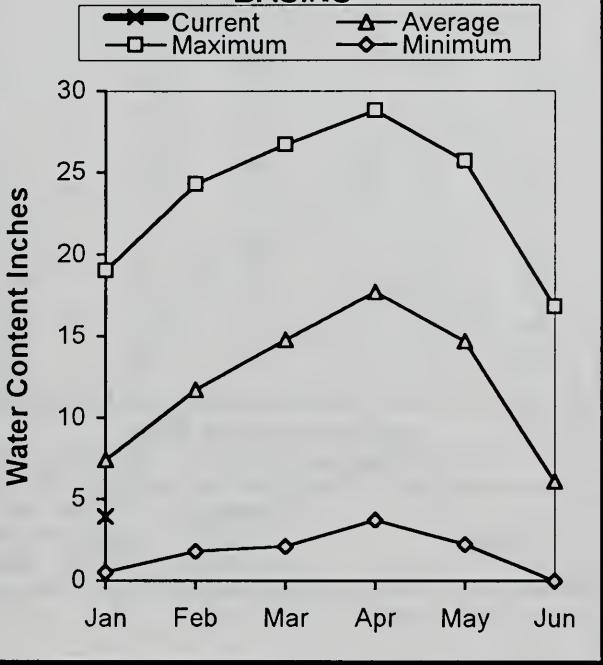
(2) - The value is natural flow - actual flow may be affected by upstream water management.

# WOOD and LOST RIVER BASINS

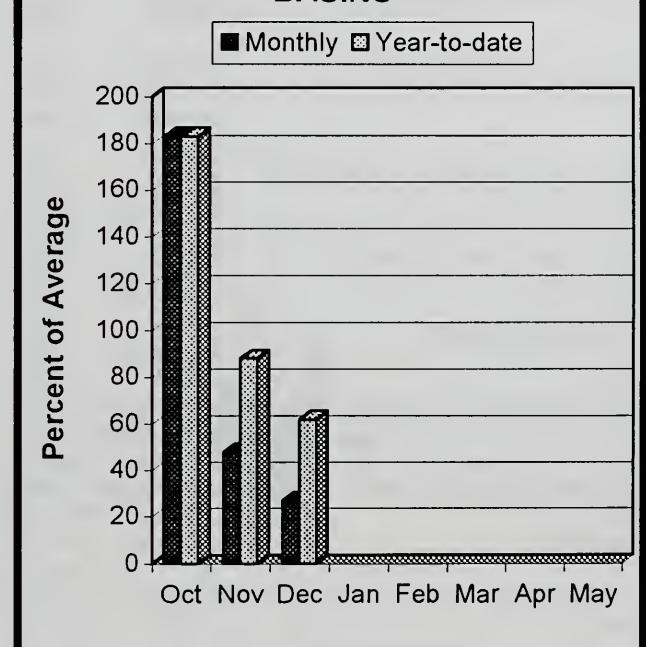
## JANUARY 1, 1998



### Mountain Snowpack (inches) WOOD AND LOST RIVER BASINS



### Mountain Precipitation WOOD AND LOST RIVER BASINS



## WATER SUPPLY OUTLOOK

The water year started with 183% of average precipitation falling in October; November brought only half the normal amount. December mountain precipitation was a minute 27% of average and only one tenth of last year's December precipitation. Precipitation for the water year is 62% of average. The snowpack in these central mountain basins is the lowest in the state at half of normal and similar to the January 1, 1994, snowpack. Snowpacks in these basins are 50% of average with the exception in the Big Lost Basin which is 61% of average. Magic Reservoir is 76% full; Little Wood Reservoir is 67%; and Mackay Reservoir is 55% full. Streamflow forecasts call for 81% of average for the Little Lost River, 45% for Magic Reservoir inflow, and 71% for Mackay Reservoir inflow. The Surface Water Supply Index, which is a combination of reservoir storage and projected streamflow, indicates water supplies may be marginal in these basins. Water users who rely on non-reservoir water may experience water supply shortages. Water users should monitor snowpack conditions carefully during the next three months; conditions could change with over half the winter still to come.

**WOOD AND LOST RIVER BASINS**  
Streamflow Forecasts - January 1, 1998

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>				30-Yr Avg. (1000AF)		
		Chance Of Exceeding *		=====				
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)			
BIG WOOD at Hailey (1)	APR-JUL	37	120	158	62	196	279	255
	APR-SEP	40	133	175	61	217	310	289
BIG WOOD near Bellevue	APR-JUL	0.0	41	80	44	119	175	183
	APR-SEP	0.0	48	88	45	128	186	197
CAMAS CREEK near Blaine	APR-JUL	8.0	21	33	32	48	77	102
	APR-SEP	8.0	21	34	33	50	78	103
BIG WOOD below Magic Dam (2)	APR-JUL	0.0	76	132	45	188	271	295
	APR-SEP	0.0	84	142	46	200	284	310
LITTLE WOOD near Carey (2)	APR-JUL	5.0	37	58	64	80	111	92
	APR-SEP	8.6	42	64	64	86	119	99
BIG LOST at Howell Ranch	APR-JUN	57	87	107	76	127	157	141
	APR-JUL	65	107	136	75	165	207	181
	APR-SEP	78	124	156	76	188	234	206
BIG LOST below Mackay Reservoir (2)	APR-JUL	39	80	108	71	136	177	153
	APR-SEP	55	100	130	71	160	205	184
LITTLE LOST blw Wet Creek	APR-JUL	16.2	22	25	81	29	34	31
	APR-SEP	21	28	33	83	37	44	39
LITTLE LOST nr Howe	APR-JUL	21	25	28	85	31	35	33
	APR-SEP	27	32	36	84	40	45	43

**WOOD AND LOST RIVER BASINS**  
Reservoir Storage (1000 AF) - End of December

**WOOD AND LOST RIVER BASINS**  
Watershed Snowpack Analysis - January 1, 1998

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			====	====
MAGIC	191.5	145.3	99.6	89.0	Big Wood ab Magic	9	21	52
LITTLE WOOD	30.0	20.2	22.0	13.5	Camas Creek	3	23	49
MACKAY	44.4	24.4	15.2	26.4	Big Wood Basin Total	11	22	52
					Little Wood River	3	21	49
					Fish Creek	0	0	0
					Big Lost River	5	22	61
					Little Lost River	3	26	51

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

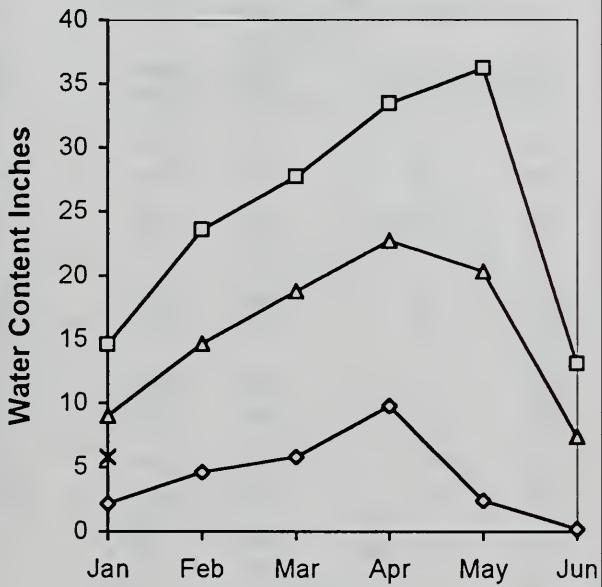
# UPPER SNAKE RIVER BASIN

## JANUARY 1, 1998



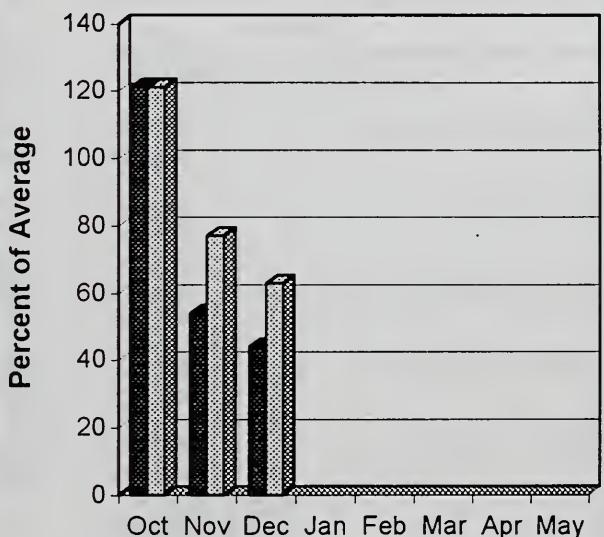
### Mountain Snowpack (inches) UPPER SNAKE RIVER BASIN

— Current    □ Maximum    ▲ Average    ◆ Minimum



### Mountain Precipitation UPPER SNAKE RIVER BASIN

■ Monthly    ▨ Year-to-date



## WATER SUPPLY OUTLOOK

Water year 1998 continued the trend established last water year with above normal precipitation falling in October, 121% of average. November brought a drying trend with only 54% of average precipitation, **the first time monthly precipitation in the upper Snake River basin was below normal since February 1997**. This dry trend continued in December with mountain precipitation at 44% of average. Water year to date precipitation is 63% of average. Snowpacks range from 73% of average in the headwaters of the Henry's Fork, Teton and Snake basins to 50% of average in the Hoback, Greys and Blackfoot basins. This year's snowpack is about one-third of last year's January 1, 1997, record snow levels. Combined reservoir storage in the upper Snake River basin is 122% of average, 78% of capacity. Streamflow forecasts call for below normal runoff and range from 75-90% of average. Good reservoir carryover storage will buffer low streamflow impacts. Agricultural water shortages are not anticipated for reservoir water users; unregulated streamflow will be below normal due to the low snow water content levels.

UPPER SNAKE RIVER BASIN  
Streamflow Forecasts - January 1, 1998

Forecast Point	Forecast Period	Future Conditions					30-Yr Avg. (1000AF)	
		<===== Drier =====		Chance Of Exceeding *		Wetter =====>		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
HENRYS FORK near Ashton (2)	APR-JUL	407	462	500	92	538	593	544
	APR-SEP	550	616	660	90	704	770	730
HENRYS FORK near Rexburg (2)	APR-JUL	794	964	1080	88	1196	1366	1228
	APR-SEP	1007	1199	1330	86	1461	1653	1551
FALLS near Squirrel (1,2)	APR-JUL	244	303	330	91	357	416	364
	APR-SEP	301	369	399	92	429	497	432
TETON near Driggs	APR-JUL	71	101	122	80	143	173	153
	APR-SEP	98	135	160	80	185	222	199
TETON near St. Anthony	APR-JUL	212	276	320	85	364	428	377
	APR-SEP	266	339	389	85	439	512	457
SNAKE near Moran (1,2)	APR-SEP	459	621	695	80	769	931	869
SNAKE above Palisades (2)	APR-JUL	1475	1779	1985	86	2191	2495	2311
	APR-SEP	1723	2064	2296	86	2528	2869	2671
GREYS above Palisades	APR-JUL	150	209	250	75	291	350	333
	APR-SEP	190	255	300	77	345	410	388
SALT near Etna	APR-JUL	118	188	235	74	282	352	319
	APR-SEP	171	251	305	76	359	439	399
PALISADES RESERVOIR INFLOW (1,2)	APR-JUL	1662	2321	2620	81	2919	3578	3226
	APR-SEP	1992	2733	3070	82	3407	4148	3763
SNAKE near Heise (2)	APR-JUL	2000	2476	2800	81	3124	3600	3451
	APR-SEP	2367	2911	3280	81	3649	4193	4049
SNAKE nr Blackfoot (1,2)	APR-JUL	2211	3249	3720	84	4191	5229	4444
	APR-SEP	2908	4072	4600	84	5128	6292	5482
PORTNEUF at Topaz	MAR-JUL	59	72	81	94	90	103	86
	MAR-SEP	72	88	98	92	108	124	107
AMERICAN FALLS RESV INFLOW (1,2)	APR-JUL	720	1765	2240	73	2715	3760	3066
	APR-SEP	710	1879	2410	73	2941	4110	3303

UPPER SNAKE RIVER BASIN  
Reservoir Storage (1000 AF) - End of December

UPPER SNAKE RIVER BASIN  
Watershed Snowpack Analysis - January 1, 1998

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
HENRYS LAKE	90.4	89.6	88.1	74.0	Camas-Beaver Creeks	4	27	45
ISLAND PARK	135.2	111.3	120.3	88.9	Henry's Fork River	10	32	72
GRASSY LAKE	15.2	8.2	12.7	10.5	Teton River	7	34	68
JACKSON LAKE	847.0	644.3	680.0	470.2	Snake above Jackson Lake	9	36	75
PALISADES	1400.0	1308.4	1244.9	1035.6	Gros Ventre River	2	33	63
RIRIE	80.5	37.3	42.4	36.4	Hoback River	5	22	51
BLACKFOOT	348.7	260.1	275.1	230.6	Greys River	3	27	52
AMERICAN FALLS	1672.6	1130.4	1407.1	1002.4	Salt River	4	31	64
					Snake above Palisades	22	32	67
					Willow Creek	7	25	65
					Blackfoot River	3	22	51
					Portneuf River	2	30	68
					Snake abv American Falls	32	30	66

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

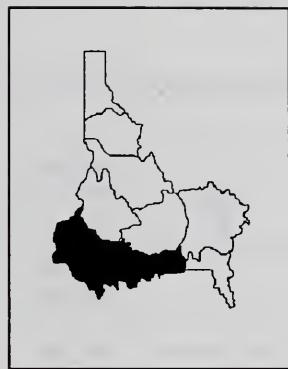
The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

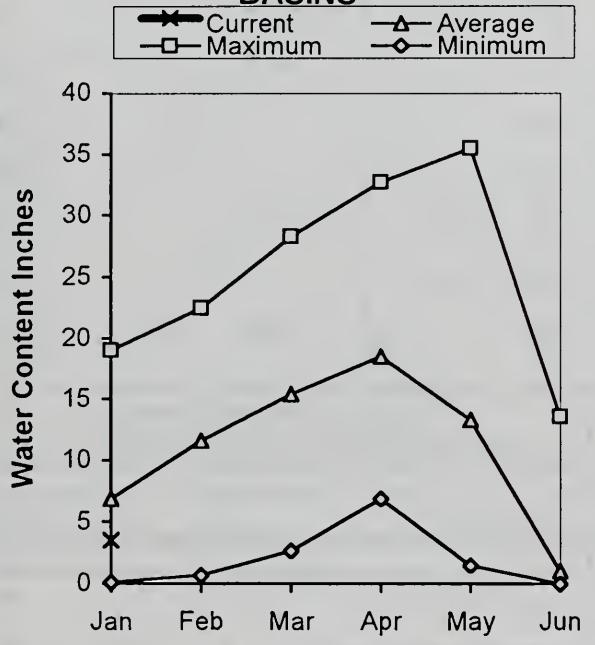
(2) - The value is natural flow - actual flow may be affected by upstream water management.

# SOUTHSIDE SNAKE RIVER BASINS

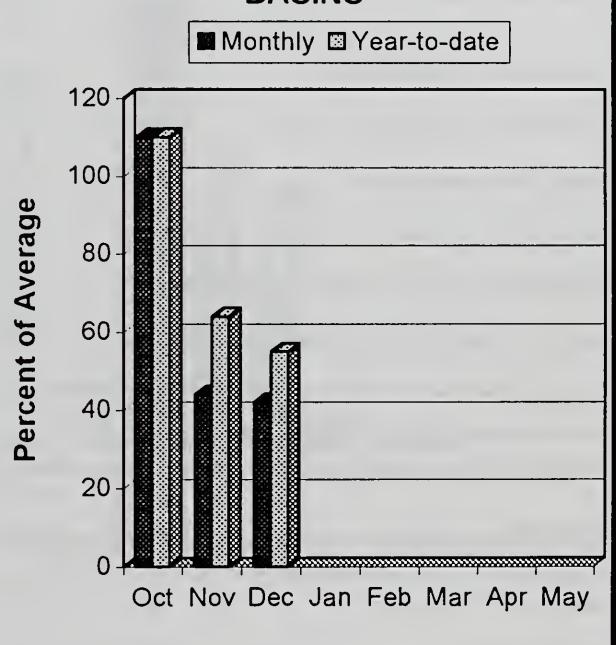
## JANUARY 1, 1998



### Mountain Snowpack (inches) SOUTHSIDE SNAKE RIVER BASINS



### Mountain Precipitation SOUTHSIDE SNAKE RIVER BASINS



## WATER SUPPLY OUTLOOK

Water year 1998 started with near normal precipitation falling in October. The weather turned drier with less than half of normal monthly amounts falling in November and December. Water year to date precipitation is 55% of average, the lowest in the state. Snow water content levels range from 50% of average in the Owyhee and Oakley basins to 70% of average in the Salmon Falls and Bruneau basins. Well above average carryover reservoir storage and high base flows from last year's runoff will help buffer low streamflows. Oakley Reservoir is 50% full; Salmon Falls Reservoir is 39% full, and Owyhee Reservoir is 61% full. Streamflow forecasts range from 45% of average in the Owyhee basin to 70% for the Oakley Reservoir inflow. The Surface Water Supply Index, which is a combination of reservoir storage and projected streamflow, indicates water supplies should be adequate in the Oakley and Salmon Falls basins. In-stream water users utilizing natural streamflows should be prepared for below normal volumes.

**SOUTHSIDE SNAKE RIVER BASINS**  
Streamflow Forecasts - January 1, 1998

Forecast Point	Forecast Period	Future Conditions					30-Yr Avg. (1000AF)	
		<<===== Drier =====		Chance Of Exceeding *		Wetter =====>		
		90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
OAKLEY RESV INFLOW	MAR-JUL	12.7	18.6	23	70	28	37	33
	MAR-SEP	14.8	21	26	72	31	40	36
SALMON FALLS CREEK nr San Jacinto	MAR-JUN	29	45	58	67	72	96	86
	MAR-JUL	31	48	61	67	76	101	92
	MAR-SEP	34	51	65	67	80	106	96
BRUNEAU near Hot Springs	MAR-JUL	92	132	162	69	196	251	235
	MAR-SEP	98	138	170	69	205	263	246
OWYHEE near Gold Creek (2)	MAR-JUL	0.0	7.9	13.8	44	19.7	28	31
OWYHEE nr Owyhee (2)	APR-JUL	0.0	16.8	38	44	59	90	86
OWYHEE near Rome	FEB-JUL	114	219	311	50	418	606	622
OWYHEE RESV INFLOW (2)	FEB-JUL	133	239	328	50	431	609	656
	FEB-SEP	145	252	342	50	445	623	684
SUCCOR CK nr Jordan Valley	FEB-JUL	0.0	3.6	8.4	52	13.2	20	16.2
SNAKE RIVER at King Hill (1,2)	APR-JUL			2030	70			2896
SNAKE RIVER near Murphy (1,2)	APR-JUL			2100	71			2980
SNAKE RIVER at Weiser (1,2)	APR-JUL			3130	57			5465
SNAKE RIVER at Hells Canyon Dam (1,2)	APR-JUL			3500	57			6129
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	5827	13304	16700	77	20096	27573	21650

**SOUTHSIDE SNAKE RIVER BASINS**  
Reservoir Storage (1000 AF) - End of December

**SOUTHSIDE SNAKE RIVER BASINS**  
Watershed Snowpack Analysis - January 1, 1998

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
OAKLEY	77.4	38.4	26.2	23.7	Raft River	1	22	60
SALMON FALLS	182.6	71.7	48.0	44.9	Goose-Trapper Creeks	2	21	55
WILDHORSE RESERVOIR	71.5	53.5	51.0	30.5	Salmon Falls Creek	4	35	73
OWYHEE	715.0	438.0	454.6	421.0	Bruneau River	5	35	70
BROWNLEE	1419.3	1356.0	1415.4	1269.8	Owyhee Basin Total	8	25	47

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural flow - actual flow may be affected by upstream water management.

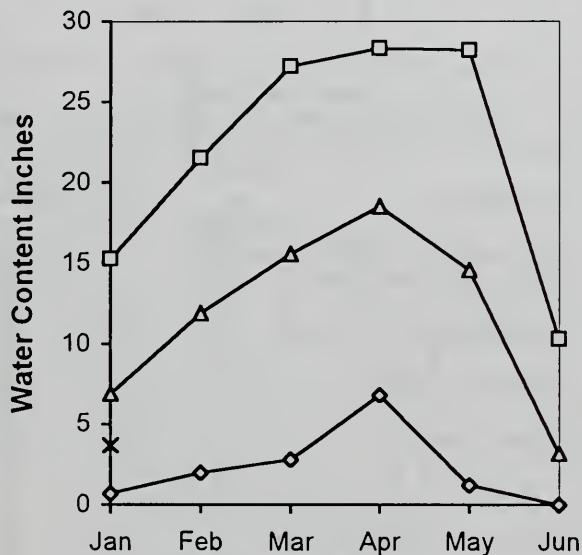
# BEAR RIVER BASIN

## JANUARY 1, 1998



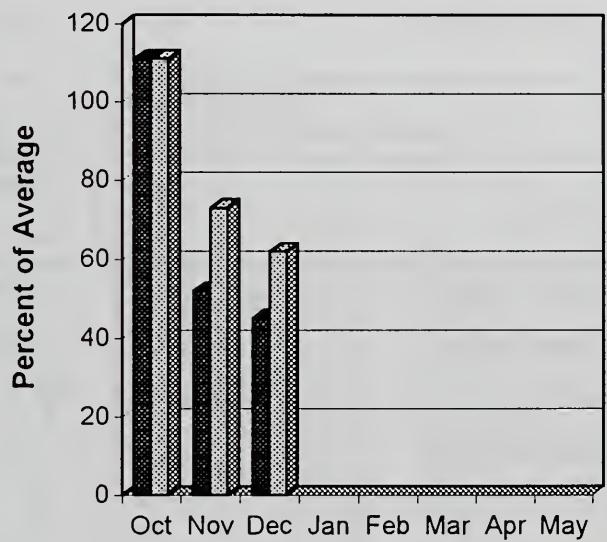
### Mountain Snowpack (inches) BEAR RIVER BASIN

■ Current      ▲ Average  
■ Maximum      △ Minimum



### Mountain Precipitation BEAR RIVER BASIN

■ Monthly      ▨ Year-to-date



## WATER SUPPLY OUTLOOK

The new water year brought decreasing amounts of precipitation each month. October precipitation was 111% of average and decreased to 45% in December. Precipitation since October 1 is 62% of average. Snowpacks in the Bear River basin are near the lowest in the state. Snowpack percentages range from 43% of average in the Montpelier Creek basin to 70% in the Cub and Malad basins. Overall, the Bear River snowpack is 60% of average which is about a quarter of last year's snowpack at this time. Bear Lake and Montpelier Creek reservoir storage is above average as a result of last year's high runoff. Each reservoir is about three-quarters full. Bear Lake has the sixth highest December 31 storage level in 75 years and is the highest since December 31, 1982. Drafting will occur to maintain adequate flood control storage space in the reservoir. Streamflow forecasts range from 60-75% of average. Bear Lake Reservoir water users will have adequate water supply this summer; in-stream water users may experience shortages if the dry conditions persist.

BEAR RIVER BASIN  
Streamflow Forecasts - January 1, 1998

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	Chance Of Exceeding *		30% (1000AF)	10% (1000AF)	
BEAR R nr Randolph, UT	APR-JUL	1.0	41	73	62	105	153	118
	APR-SEP	1.0	44	79	62	114	165	127
SMITHS FK nr Border, WY	APR-JUL	42	59	73	72	91	126	102
	APR-SEP	52	71	87	74	107	145	118
THOMAS FK nr WY-ID State Line	APR-JUL	8.3	13.2	18.0	55	25	39	33
	APR-SEP	9.6	14.8	20	56	27	42	36
BEAR R blw Stewart Dam nr Montpelier	APR-JUL	55	123	170	59	217	285	288
	APR-SEP	68	143	195	60	247	322	327
MONTPELIER CK nr Montpelier (2)	APR-JUL	3.9	5.5	7.0	57	8.9	12.6	12.2
	APR-SEP	4.9	6.6	8.0	56	9.7	13.0	14.2
CUB R nr Preston	APR-JUL	17.0	28	35	75	42	53	47

BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of December					BEAR RIVER BASIN Watershed Snowpack Analysis - January 1, 1998				
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of		
		This Year	Last Year	Avg			Last Yr	Average	
WOODRUFF NARROWS		NO REPORT			Smiths & Thomas Forks	2	26	64	
WOODRUFF CREEK		NO REPORT			Bear River ab WY-ID line	7	31	61	
BEAR LAKE	1421.0	1127.3	897.5	992.6	Montpelier Creek	1	25	43	
MONTPELIER CREEK	4.0	2.9	2.6	1.6	Mink Creek	1	23	49	
					Cub River	1	27	71	
					Bear River ab ID-UT line	13	29	60	
					Malad River	1	20	69	

\* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

The average is computed for the 1961-1990 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural flow - actual flow may be affected by upstream water management.

## Streamflow Adjustment List For All Forecasts Published In Idaho Basin Outlook Report

Streamflow forecasts are projections of runoff volumes that would have occurred naturally without influences from upstream reservoirs or diversions. These values are referred to as natural or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and interbasin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made to each forecast point in this report.

### Panhandle River Basins

#### Weiser, Payette, Boise River Basins

Upper Snake River Basin	
HOOTENAI R AT LEONIA, ID + LAKE KOOCANUSA (STORAGE CHANGE)	HENRYS FORK NR ASHTON, ID + HENRYS LAKE (STORAGE CHANGE)
CLARK FORK R AT WHITEHORSE RAPIDS, ID + HUNGRY HORSE (STORAGE CHANGE)	DEADWOOD RESERVOIR INFLOW, ID + DEADWOOD R BLW DEADWOOD RESV NR LOWMAN + DEADWOOD RESV (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)	+ DEADWOOD RESV (STORAGE CHANGE)
+ NOXON RAPIDS RESV (STORAGE CHANGE)	WF PAYETTE R AT CASCADE, ID + CASCADE RESV (STORAGE CHANGE)
PEND OREILLE LAKE INFLOW, ID + PEND OREILLE R AT NEWPORT, WA + HUNGRY HORSE (STORAGE CHANGE)	WF PAYETTE R NR BANKS, ID + CASCADE RESV (STORAGE CHANGE)
+ FLATHEAD LAKE (STORAGE CHANGE)	PAYETTE R NR HORSESHOE BEND, ID + DEADWOOD RESV (STORAGE CHANGE)
+ NOXON RAPIDS (STORAGE CHANGE)	+ CASCADE RESV (STORAGE CHANGE)
+ PEND OREILLE LAKE (STORAGE CHANGE)	BOISE R NR TWIN SPRINGS, ID - No Corrections + ANDERSON RANCH RESV (STORAGE CHANGE)
PRIEST R NR PRIEST R, ID + PRIEST LAKE (STORAGE CHANGE)	BOISE CK NR ARROWROCK DAM, ID - No Corrections + ANDERSON RANCH RESV (STORAGE CHANGE)
COEUR D'ALENE R AT ENAVILLE, ID - No Corrections	BOISE R NR BOISE, ID + ANDERSON RANCH RESV (STORAGE CHANGE)
ST. JOE R AT CALDER, ID - No Corrections	+ ARROWROCK RESV (STORAGE CHANGE)
SPOKANE R NR POST FALLS, ID + COEUR D'ALENE LAKE (STORAGE CHANGE)	+ LUCKY PEAK RESV (STORAGE CHANGE)
SPOKANE R AT LONG LAKE, ID + COEUR D'ALENE LAKE (STORAGE CHANGE)	
Wood and Lost River Basins	
CLEARWATER R AT OROFINO, ID - No Corrections	BIG WOOD R AT HAILEY, ID - No Corrections
DWORSHAK RESERVOIR INFLOW, ID + CLEARWATER R NR PECK, ID + DWORSHAK RESV (STORAGE CHANGE)	BIG WOOD R NR BELLEVUE, ID - No Corrections CAMS CK NR BLAINE, ID - No Corrections BIG WOOD R BLW MAGIC DAM NR RICHFIELD, ID + MAGIC RESV (STORAGE CHANGE)
- CLEARWATER R AT OROFINO, ID	LITTLE WOOD R NR CAREY, ID + LITTLE WOOD RESV (STORAGE CHANGE)
CLEARWATER R AT SPALDING, ID + DWORSHAK RESV (STORAGE CHANGE)	BIG LOST R AT HOWELL RANCH NR CHILLY, ID - No Corrections BIG LOST R BLW MACKAY RESV NR MACKAY, ID + MACKAY RESV (STORAGE CHANGE)
Salmon River Basin	
SALMON R AT SALMON, ID - No Corrections	LITTLE LOST R BLW WET CK NR HOWE, ID - No Corrections
SALMON R AT WHITE BIRD, ID - No Corrections	

## Southside Snake River Basins

RESERVOIR CAPACITY DEFINITIONS - Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir status terms include dead, inactive, active, and surcharge storage. The table below lists these volumes for each reservoir in this report, and defines the storage volumes that NRCS uses when reporting capacity and current reservoir storage. In most cases, NRCS reports useable storage, which includes active and inactive storage.

BASIN/RESERVOIR	DEAD STORAGE	INACTIVE STORAGE	ACTIVE STORAGE	SURCHARGE STORAGE	NRCS CAPACITY	NRCS FIGURES INCLUDE
<u>PANHANDLE REGION</u>						
BRUNEAU R NR HOT SPRINGS, ID - No Corrections	39.73	--	3451.00	--	3451.0	ACTIVE
OWYHEE R NR GOLD CK, NV	Unknown	--	1791.00	--	1971.0	ACTIVE
+ WILDHORSE RESV (STORAGE CHANGE)	Unknown	--	335.00	--	335.0	ACTIVE
OWYHEE R NR ROME, OR	406.20	112.40	1042.70	--	1561.3	DEAD + INACTIVE + ACTIVE
+ WILDHORSE RESV (STORAGE CHANGE)	--	13.50	225.00	--	238.5	INACTIVE + ACTIVE
+ JORDAN VALLEY RESV (STORAGE CHANGE)	--	28.00	71.30	--	119.3	DEAD + INACTIVE + ACTIVE
OWYHEE RESERVOIR INFLOW, OR	--	--	--	--	--	--
+ Owyhee R BLW Owyhee Dam, OR	--	--	--	--	--	--
+ Owyhee Resv (Storage Change)	--	--	--	--	--	--
+ DIV TO NORTH AND SOUTH CANALS	--	--	--	--	--	--
SUCCOR CK NR JORDAN VALLEY, OR - No Corrections	0.24	11.10	11.1	--	11.1	ACTIVE
SNAKE R - KING HILL, ID - No Corrections	50.00	653.20	--	--	703.2	INACTIVE + ACTIVE
SNAKE R NR MURPHY, ID - No Corrections	1.50	--	161.90	--	161.9	ACTIVE
SNAKE R AT WEISER, ID - No Corrections	29.00	41.00	423.18	--	464.2	INACTIVE + ACTIVE
SNAKE R AT HELLS CANYON DAM, ID	--	--	286.60	--	286.6	ACTIVE
+ BROWNLEE RESV (STORAGE CHANGE)	--	28.80	264.40	13.80	293.2	INACTIVE + ACTIVE
LAKELOWELL	--	8.00	169.10	--	169.1	ACTIVE
<u>WOOD/LOST BASINS</u>						
MAGIC	--	--	191.50	--	191.5	ACTIVE
LITTLE WOOD	--	--	30.00	--	30.0	ACTIVE
MACKAY	0.13	--	44.37	--	44.4	ACTIVE
<u>UPPER SNAKE BASIN</u>						
BEAR R NR RANDOLPH, UT	--	--	90.40	--	90.4	ACTIVE
+ SULPHUR CK RESV (STORAGE CHANGE)	--	--	127.30	7.90	135.2	ACTIVE + SURCHARGE
+ CHAPMAN CANAL DIVERSION	--	--	16.18	--	15.2	ACTIVE
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)	--	--	847.00	--	847.0	ACTIVE
SMITHS FORK NR BORDER, WY - No Corrections	--	--	1200.00	--	1400.0	DEAD + INACTIVE + ACTIVE
THOMAS FORK NR WY-ID STATELINE - No Corrections	--	--	80.54	10.00	80.5	ACTIVE
BEAR R BLW STEWART DAM, ID	44.10	166.50	348.73	--	348.7	ACTIVE
+ SULPHUR CK RESV (STORAGE CHANGE)	4.00	6.00	1672.60	--	1672.6	ACTIVE
+ CHAPMAN CANAL DIVERSION	--	--	--	--	--	--
+ WOODRUFF NARROWS RESV (STORAGE CHANGE)	--	--	--	--	--	--
+ TOTAL OF 12 CANALS	--	--	77.40	--	77.4	ACTIVE
+ WESTFORK CANAL	--	--	182.65	--	182.6	ACTIVE
+ DINGLE INLET CANAL	--	--	71.50	--	71.5	ACTIVE
+ RAINBOW INLET CANAL	--	--	715.00	--	715.0	ACTIVE
MONTPELIER CK NR MONTPELIER, ID	406.83	--	975.30	--	1419.3	INACTIVE + ACTIVE
+ MONTPELIER CK RESV (STORAGE CHANGE)	0.46	444.00	--	--	--	--
<u>SOUTHSIDE SNAKE BASINS</u>						
OAKLEY	--	--	--	--	--	--
SALMON FALLS	48.00	--	--	--	--	--
WILDHORSE	--	--	--	--	--	--
OWYHEE	--	--	--	--	--	--
BROWNLEE	406.83	--	--	--	--	--
<u>BEAR RIVER BASIN</u>	0.46	444.00	975.30	--	--	--
WOODRUFF NARROWS	--	1.50	57.30	--	57.3	ACTIVE
WOODRUFF CREEK	--	4.00	4.00	--	4.0	ACTIVE
BEAR LAKE	--	--	1421.00	--	1421.0	ACTIVE
MONTPELIER CREEK	--	--	3.84	--	4.0	DEAD + ACTIVE

# Interpreting Streamflow Forecasts

## Using the forecasts - an example

**Introduction**  
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflows are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

**Most Probable (50 Percent Chance of Exceeding) Forecast.** This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations. There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

### To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

**70 Percent Chance of Exceeding Forecast.** There is a 70 percent chance that the streamflow volume will exceed this forecast value. There is a 30 percent chance the streamflow volume will be less than this forecast value.

**90 Percent Chance of Exceeding Forecast.** There is a 90 percent chance that the streamflow volume will exceed this forecast value. There is a 10 percent chance the streamflow volume will be less than this forecast value.

### To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

- 30 Percent Chance of Exceeding Forecast.** There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.
- 10 Percent Chance of Exceeding Forecast.** There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

**Using the Most Probable Forecast.** Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River nears Death between March 1 and July 31.

**Using the Higher Exceedance Forecasts.** If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are available from the National Weather Service every two weeks), or if they are operating at a level where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

**Using the Lower Exceedance Forecasts.** If users expect wetter future conditions, or if the chance that the out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

STREAMFLOW FORECASTS								
FORECAST POINT	FORECAST PERIOD	FUTURE CONDITIONS						
		50% (Most Probable) (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	30% (1000AF)	10% (1000AF)		
MARY'S RIVER nr Death	MAR-JUL APR-JUL	50 80	20.0 17.0	36 31	77 74	52 45	76 67	47 42
LAMOILLE CREEK nr Lamoille	MAR-JUL APR-JUL	6.0 4.0	16.0 15.0	24 22	79 75	32 30	43 41	31 30
NR HUMBOLDT RIVER at Devil's Gate	MAR-JUL	6.0	12.0	43	73	74	121	59

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts".



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